FIG.1

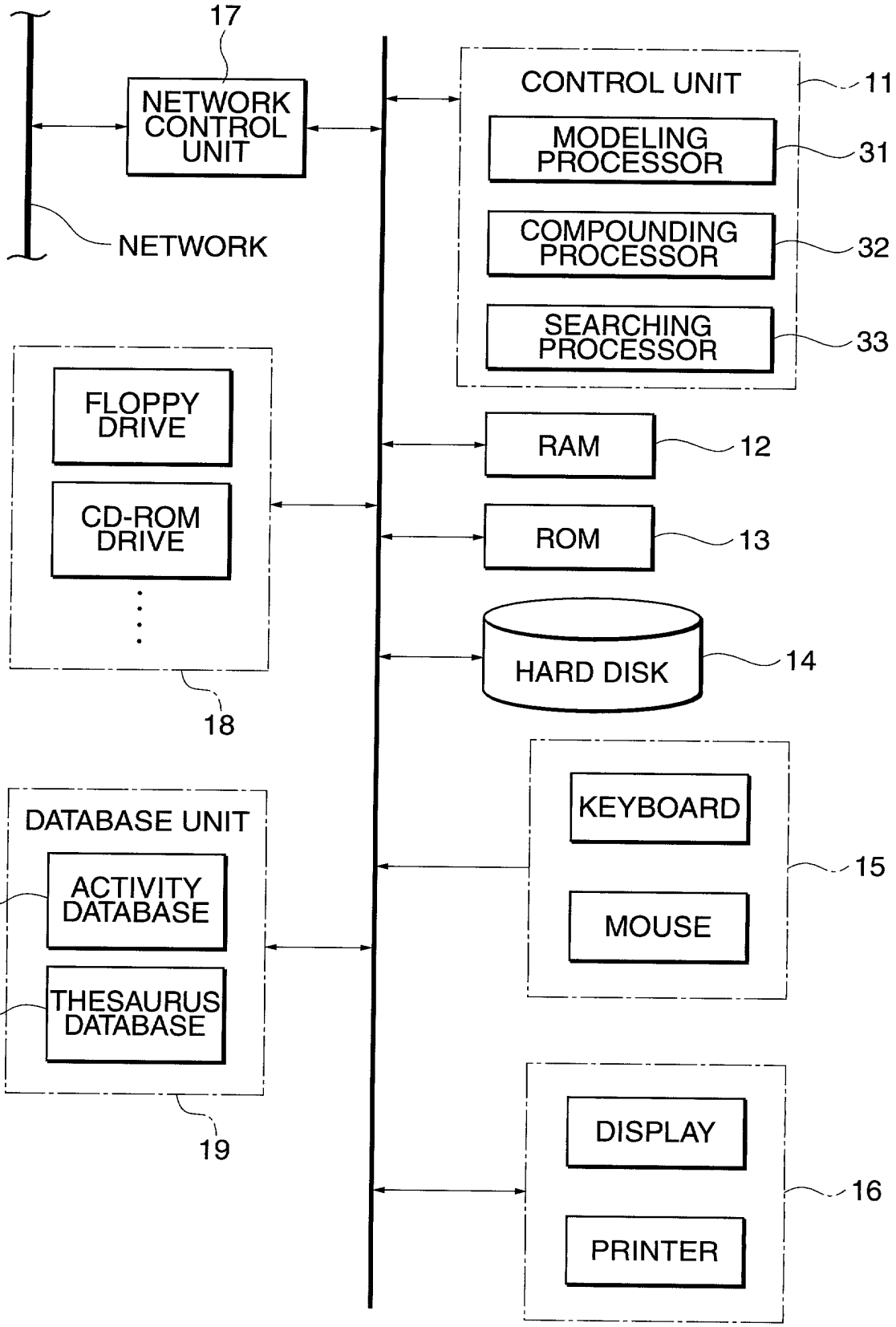

17
NETWORK CONTROL UNIT
NETWORK
CONTROL UNIT
11
MODELING PROCESSOR
31
COMPOUNDING PROCESSOR
32
SEARCHING PROCESSOR
33
FLOPPY DRIVE
CD-ROM DRIVE
18
RAM
12
ROM
13
HARD DISK
14
DATABASE UNIT
41
ACTIVITY DATABASE
42
THESAURUS DATABASE
19
KEYBOARD
MOUSE
15
DISPLAY
PRINTER
16

FIG.2

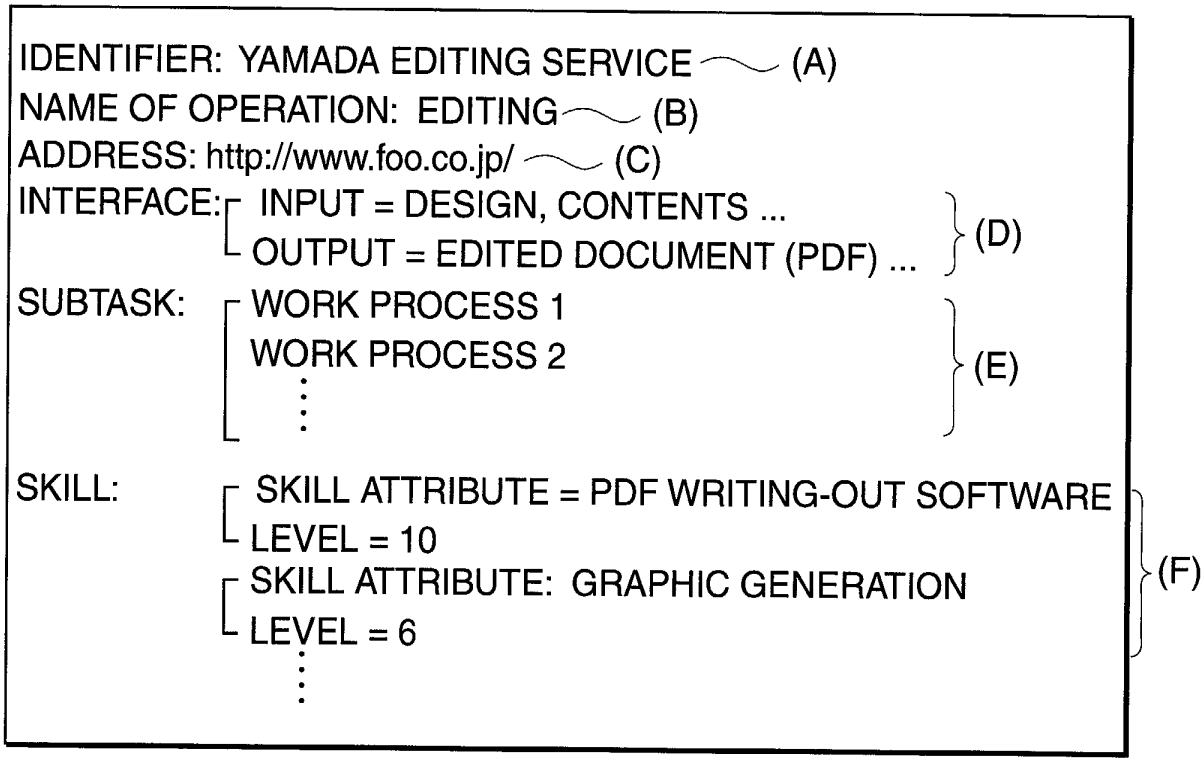

IDENTIFIER: YAMADA EDITING SERVICE (A)
NAME OF OPERATION: EDITING (B)
ADDRESS: http://www.foo.co.jp/ (C)
INTERFACE:
INPUT = DESIGN, CONTENTS ...
OUTPUT = EDITED DOCUMENT (PDF) ...
(D)
SUBTASK:
WORK PROCESS 1
WORK PROCESS 2
(E)
SKILL:
SKILL ATTRIBUTE = PDF WRITING-OUT SOFTWARE
LEVEL = 10
SKILL ATTRIBUTE: GRAPHIC GENERATION
LEVEL = 6
(F)

FIG.3

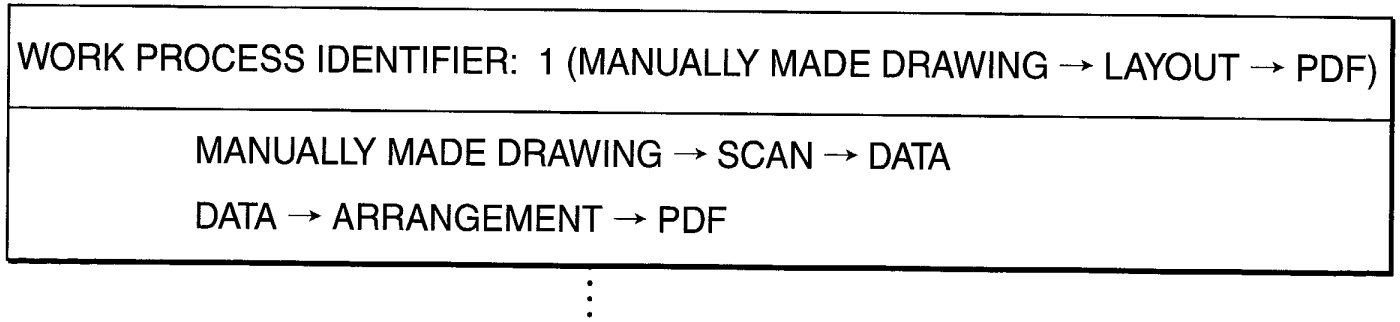

WORK PROCESS IDENTIFIER: 1 (MANUALLY MADE DRAWING → LAYOUT → PDF)
MANUALLY MADE DRAWING → SCAN → DATA
DATA → ARRANGEMENT → PDF

FIG.4

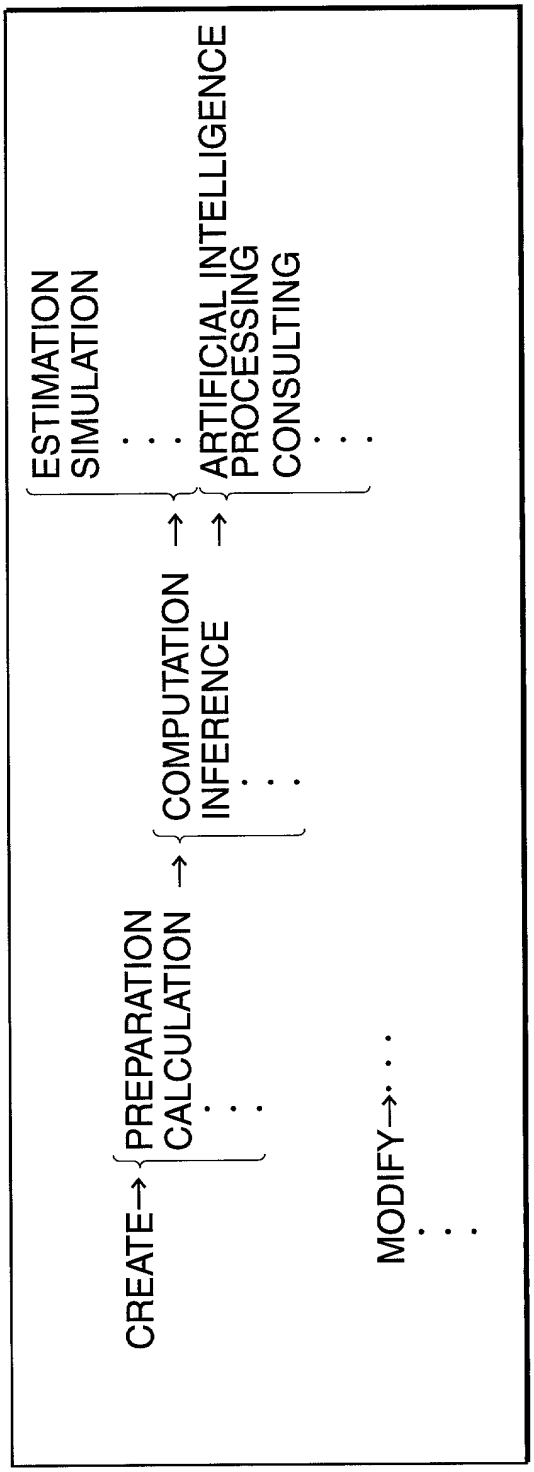

CREATE→
PREPARATION
CALCULATION
. . .
COMPUTATION
INFERENCE
. . .
ESTIMATION
SIMULATION
. . .
ARTIFICIAL INTELLIGENCE
PROCESSING
CONSULTING
. . .
MODIFY→. . .
. . .

FIG.5

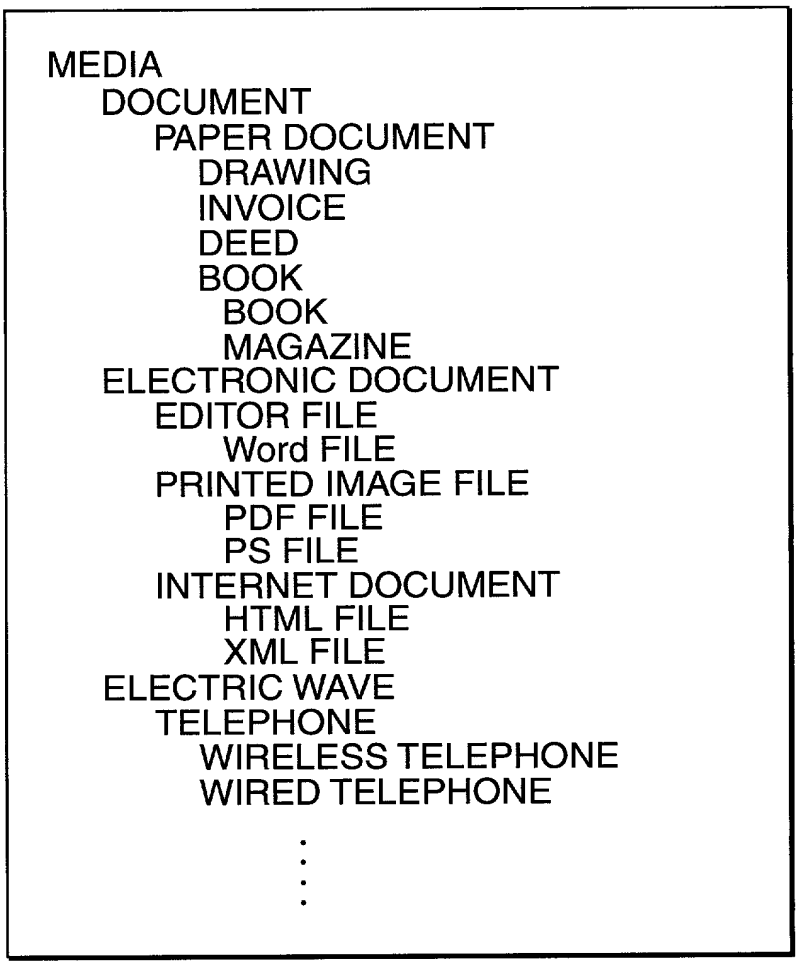

MEDIA
DOCUMENT
PAPER DOCUMENT
DRAWING
INVOICE
DEED
BOOK
BOOK
MAGAZINE
ELECTRONIC DOCUMENT
EDITOR FILE
Word FILE
PRINTED IMAGE FILE
PDF FILE
PS FILE
INTERNET DOCUMENT
HTML FILE
XML FILE
ELECTRIC WAVE
TELEPHONE
WIRELESS TELEPHONE
WIRED TELEPHONE

FIG.6

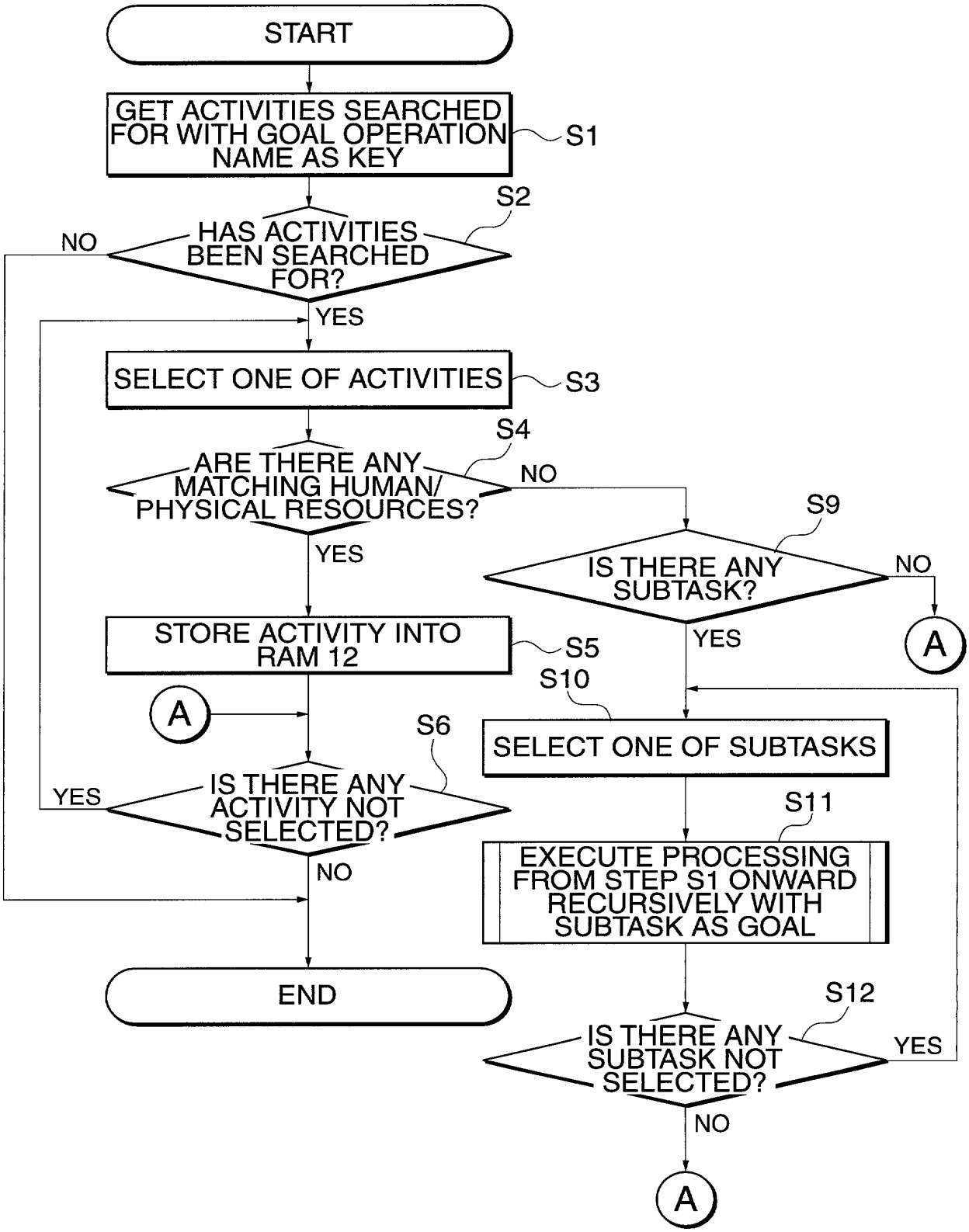

START
GET ACTIVITIES SEARCHED FOR WITH GOAL OPERATION NAME AS KEY
S1
HAS ACTIVITIES BEEN SEARCHED FOR?
S2
NO
YES
SELECT ONE OF ACTIVITIES
S3
ARE THERE ANY MATCHING HUMAN/ PHYSICAL RESOURCES?
S4
NO
YES
STORE ACTIVITY INTO RAM 12
S5
A
IS THERE ANY ACTIVITY NOT SELECTED?
S6
YES
NO
END
IS THERE ANY SUBTASK?
S9
NO
YES
A
SELECT ONE OF SUBTASKS
S10
EXECUTE PROCESSING FROM STEP S1 ONWARD RECURSIVELY WITH SUBTASK AS GOAL
S11
IS THERE ANY SUBTASK NOT SELECTED?
S12
YES
NO
A

FIG.7

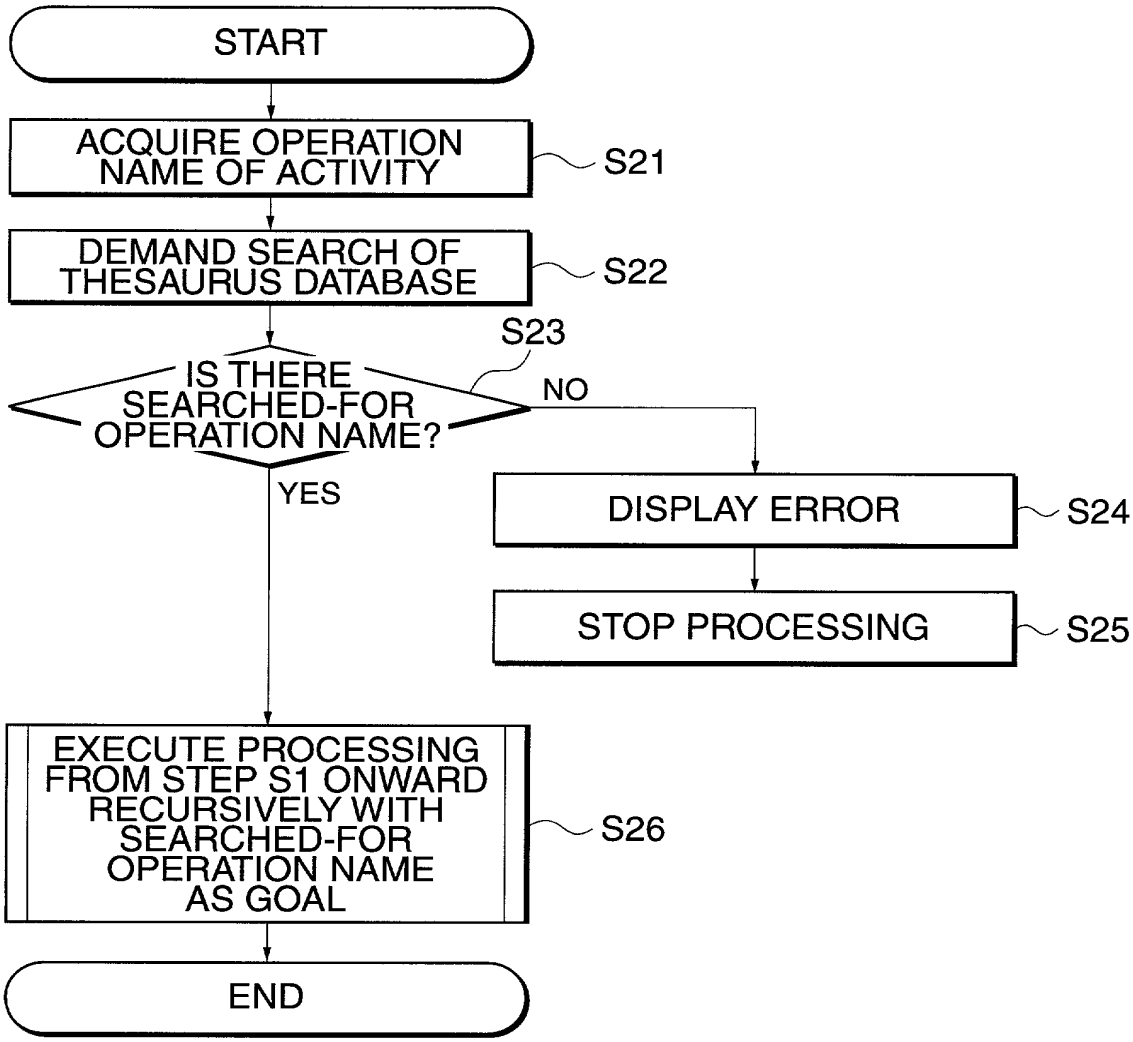

START
ACQUIRE OPERATION NAME OF ACTIVITY
S21
DEMAND SEARCH OF THESAURUS DATABASE
S22
S23
IS THERE SEARCHED-FOR OPERATION NAME?
NO
YES
DISPLAY ERROR
S24
STOP PROCESSING
S25
EXECUTE PROCESSING FROM STEP S1 ONWARD RECURSIVELY WITH SEARCHED-FOR OPERATION NAME AS GOAL
S26
END

FIG.8

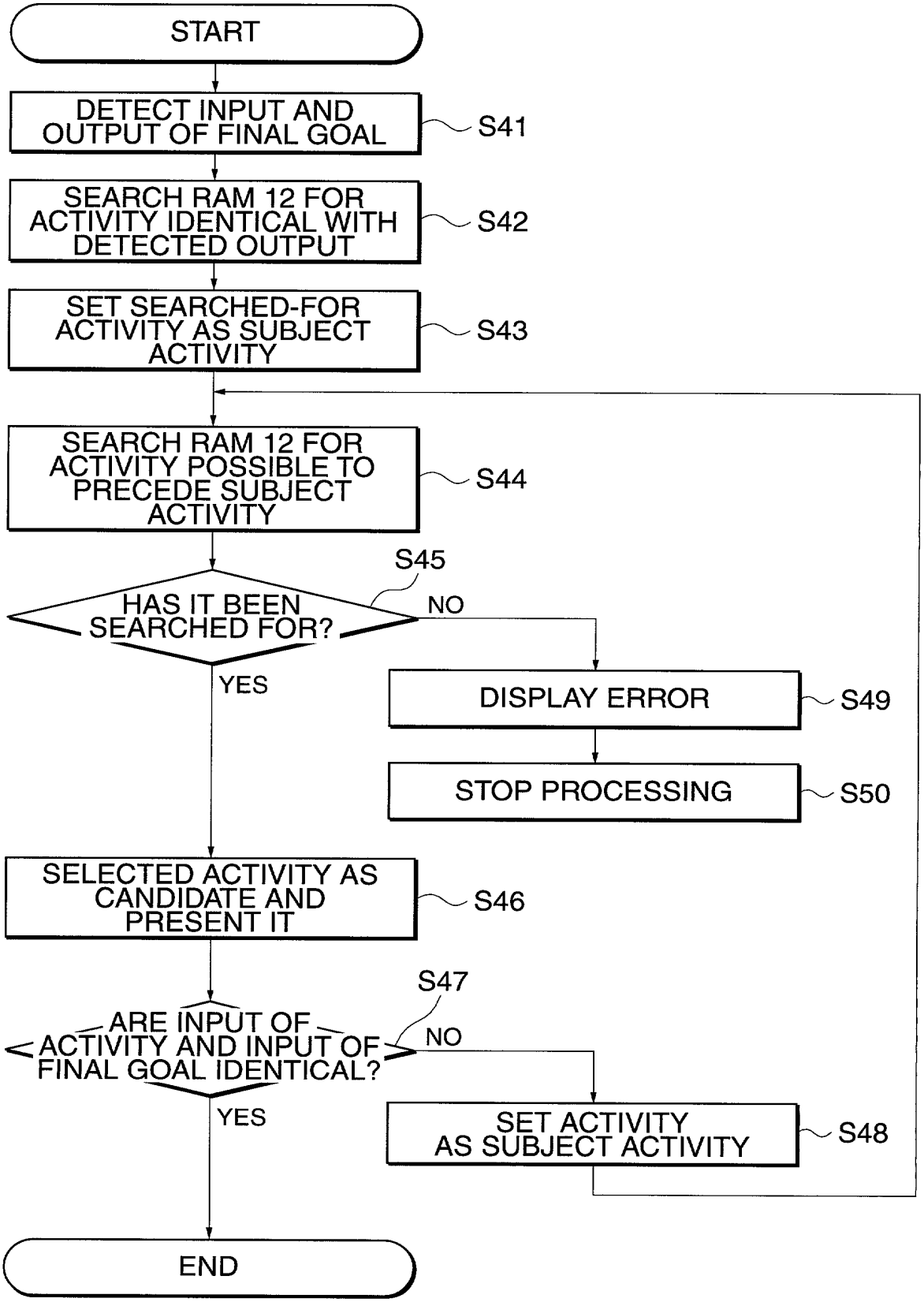

START
DETECT INPUT AND OUTPUT OF FINAL GOAL
S41
SEARCH RAM 12 FOR ACTIVITY IDENTICAL WITH DETECTED OUTPUT
S42
SET SEARCHED-FOR ACTIVITY AS SUBJECT ACTIVITY
S43
SEARCH RAM 12 FOR ACTIVITY POSSIBLE TO PRECEDE SUBJECT ACTIVITY
S44
S45
HAS IT BEEN SEARCHED FOR?
NO
YES
DISPLAY ERROR
S49
STOP PROCESSING
S50
SELECTED ACTIVITY AS CANDIDATE AND PRESENT IT
S46
S47
ARE INPUT OF ACTIVITY AND INPUT OF FINAL GOAL IDENTICAL?
NO
YES
SET ACTIVITY AS SUBJECT ACTIVITY
S48
END

FIG.9

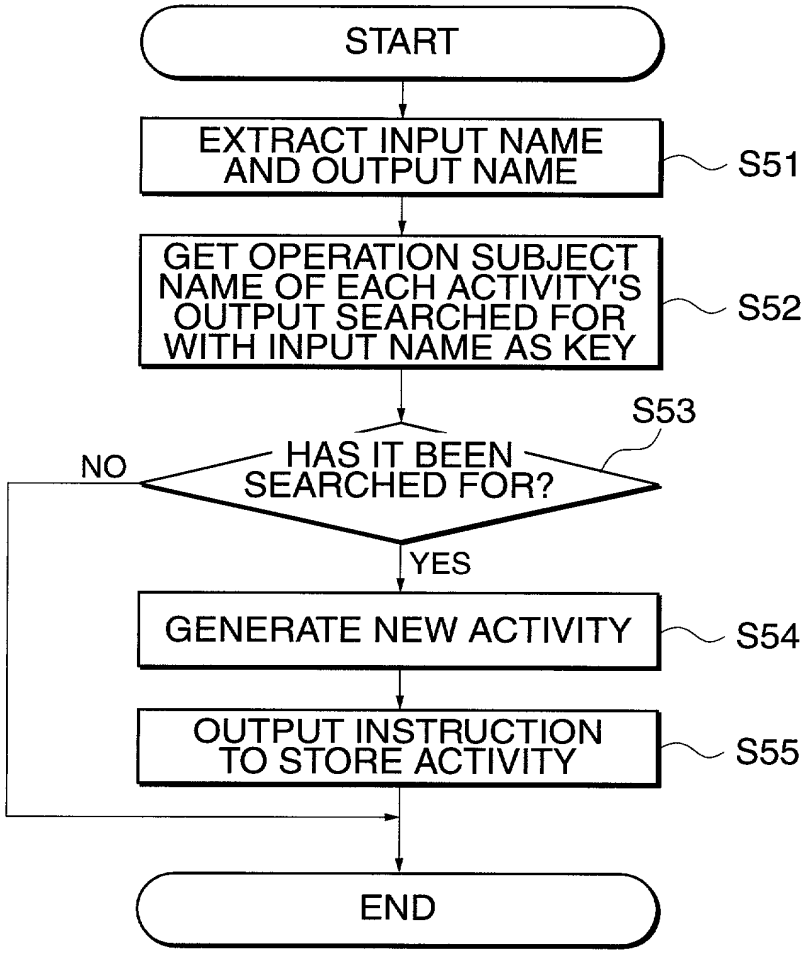

START
EXTRACT INPUT NAME AND OUTPUT NAME
S51
GET OPERATION SUBJECT NAME OF EACH ACTIVITY'S OUTPUT SEARCHED FOR WITH INPUT NAME AS KEY
S52
S53
HAS IT BEEN SEARCHED FOR?
NO
YES
GENERATE NEW ACTIVITY
S54
OUTPUT INSTRUCTION TO STORE ACTIVITY
S55
END

FIG.10

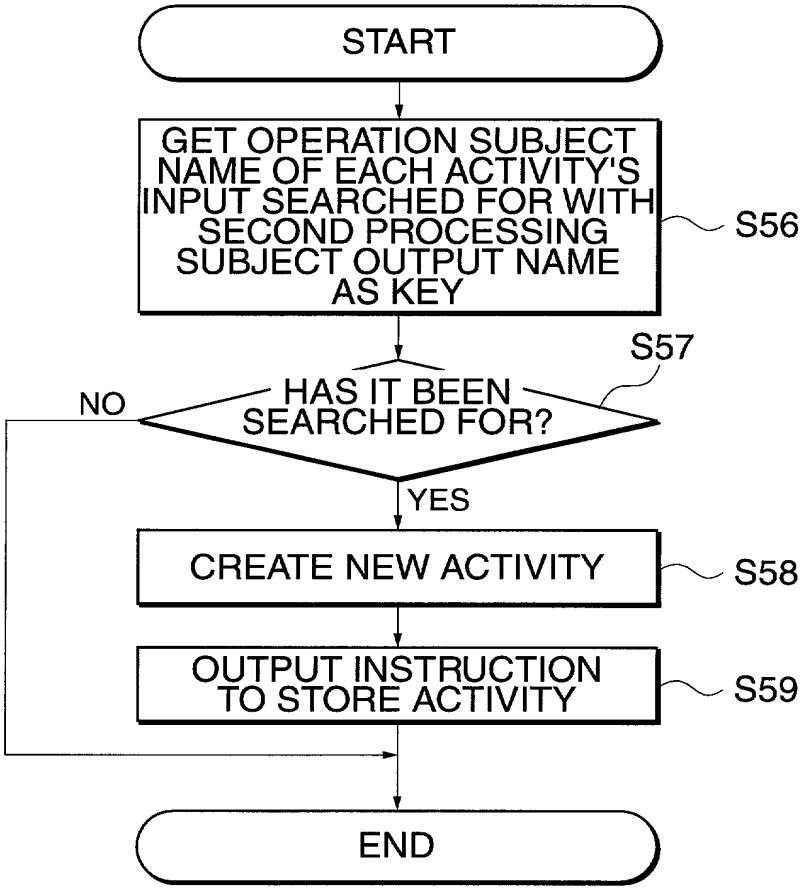

START
GET OPERATION SUBJECT NAME OF EACH ACTIVITY'S INPUT SEARCHED FOR WITH SECOND PROCESSING SUBJECT OUTPUT NAME AS KEY
S56
S57
HAS IT BEEN SEARCHED FOR?
NO
YES
CREATE NEW ACTIVITY
S58
OUTPUT INSTRUCTION TO STORE ACTIVITY
S59
END

FIG.11

COMPOUND PATTERN	INTERPRETATION
CREATE(out:X) + MODIFY(in : X, out : Y)	CREATE(out:Y)
MODIFY(in : X, out : Y) + MODIFY(in : Y, out : Z)	MODIFY(in : X, out : Z)
COMBINE(in : *,out:X) + MODIFY(in : X, out : Y)	COMBINE(in : *,out : Y)
MODIFY(in : X, out : Y) + SEPARATE(in : Y, out : *)	SEPARATE(in : X,out : *)

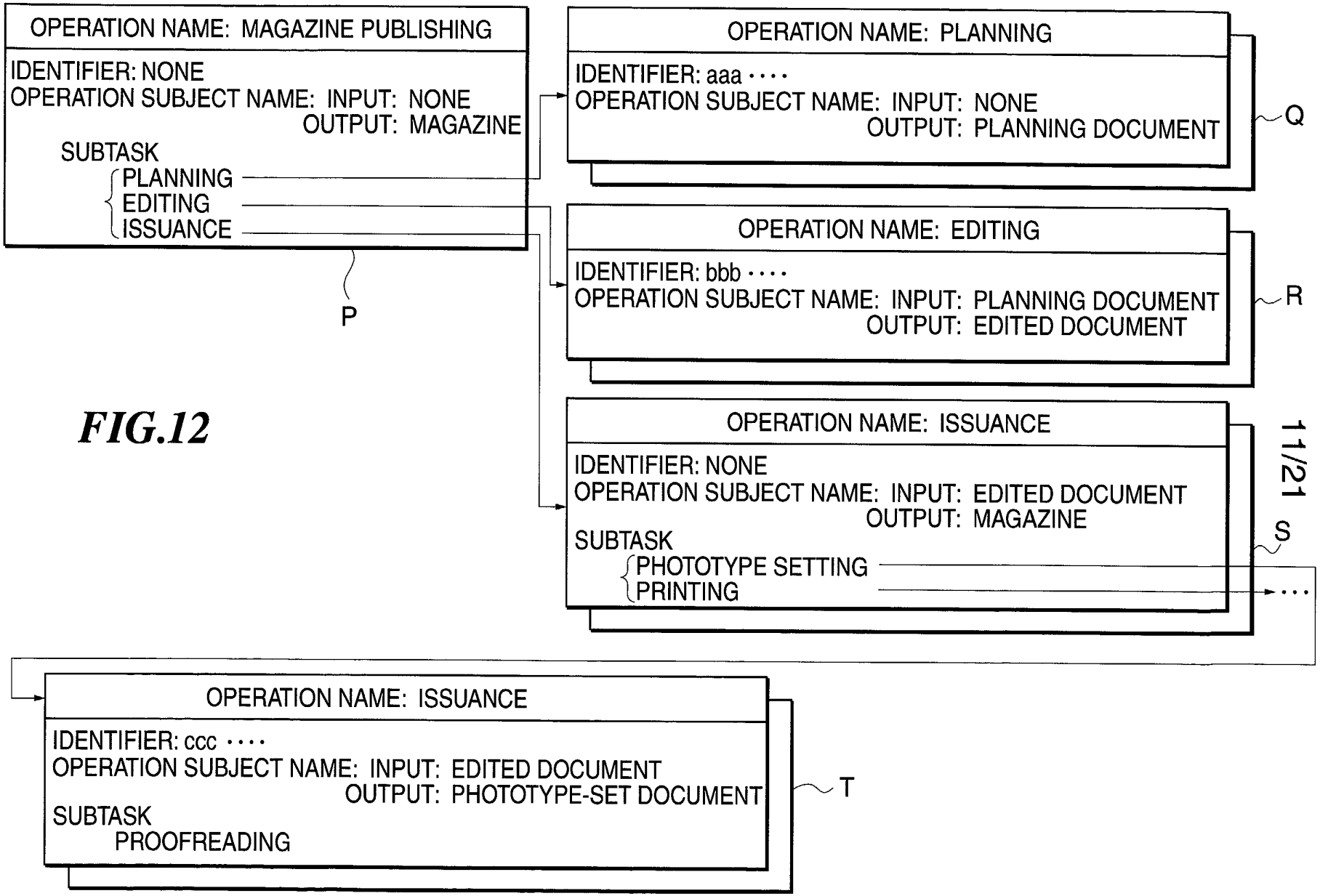

OPERATION NAME: MAGAZINE PUBLISHING
IDENTIFIER: NONE
OPERATION SUBJECT NAME: INPUT: NONE
OUTPUT: MAGAZINE
SUBTASK
PLANNING
EDITING
ISSUANCE
P
OPERATION NAME: PLANNING
IDENTIFIER: aaa ····
OPERATION SUBJECT NAME: INPUT: NONE
OUTPUT: PLANNING DOCUMENT
Q
OPERATION NAME: EDITING
IDENTIFIER: bbb ····
OPERATION SUBJECT NAME: INPUT: PLANNING DOCUMENT
OUTPUT: EDITED DOCUMENT
R
OPERATION NAME: ISSUANCE
IDENTIFIER: NONE
OPERATION SUBJECT NAME: INPUT: EDITED DOCUMENT
OUTPUT: MAGAZINE
SUBTASK
PHOTOTYPE SETTING
PRINTING
S
OPERATION NAME: ISSUANCE
IDENTIFIER: ccc ····
OPERATION SUBJECT NAME: INPUT: EDITED DOCUMENT
OUTPUT: PHOTOTYPE-SET DOCUMENT
SUBTASK
PROOFREADING
T

FIG.12

FIG.13

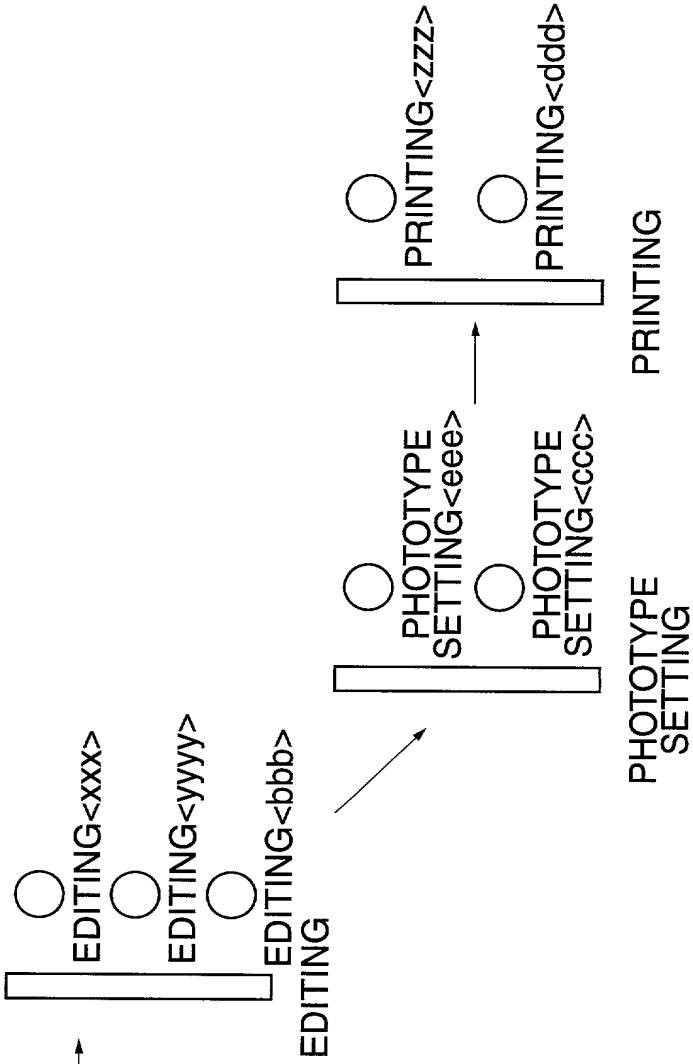

PLANNING
<aaa ・・・>
EDITING<xxx>
EDITING<yyyy>
EDITING<bbb>
EDITING
PHOTOTYPE SETTING<eee>
PHOTOTYPE SETTING<ccc>
PHOTOTYPE SETTING
PRINTING<zzz>
PRINTING<ddd>
PRINTING

FIG.14

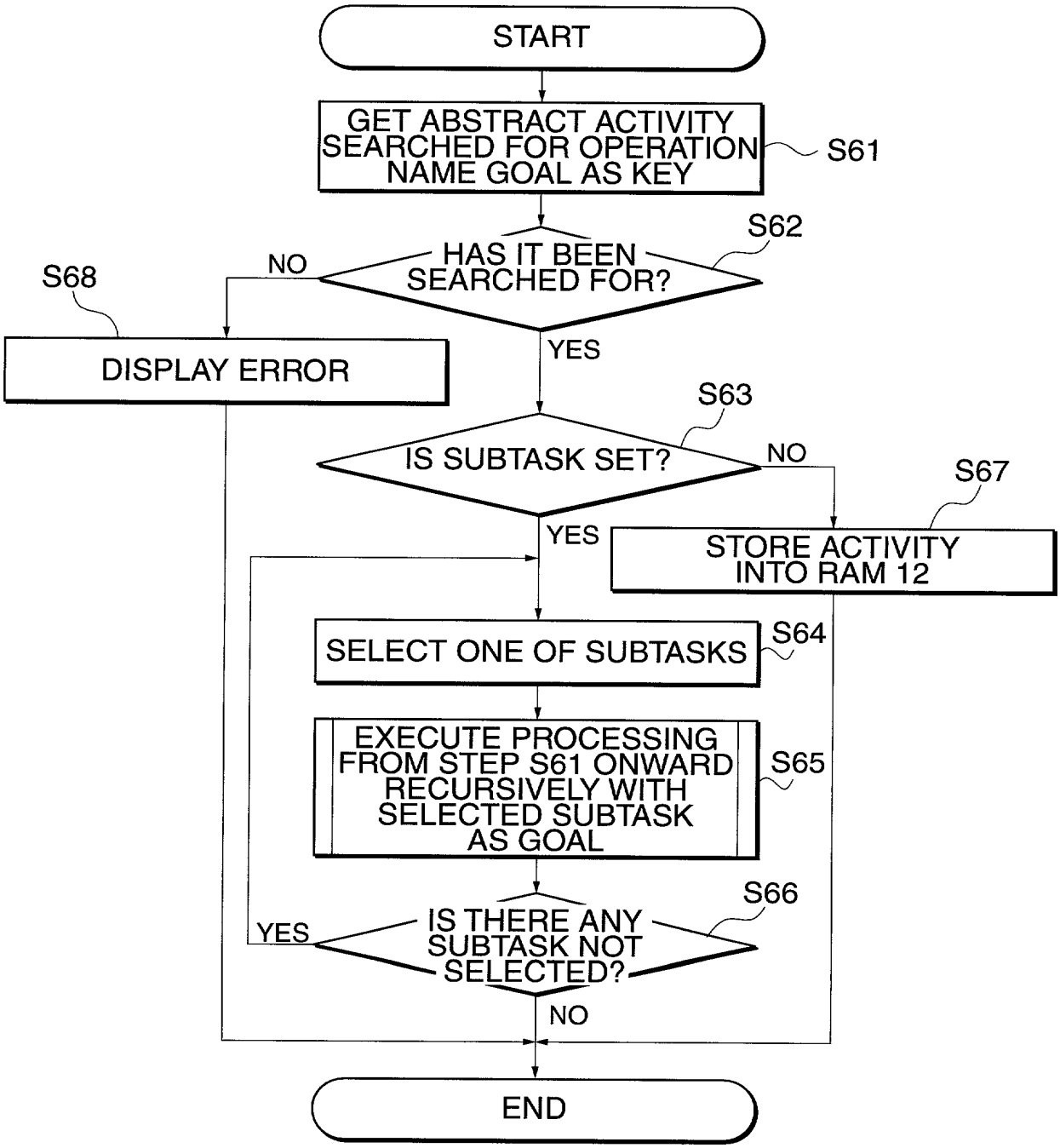

START
GET ABSTRACT ACTIVITY SEARCHED FOR OPERATION NAME GOAL AS KEY
S61
HAS IT BEEN SEARCHED FOR?
S62
NO
S68
DISPLAY ERROR
YES
IS SUBTASK SET?
S63
NO
S67
STORE ACTIVITY INTO RAM 12
YES
SELECT ONE OF SUBTASKS
S64
EXECUTE PROCESSING FROM STEP S61 ONWARD RECURSIVELY WITH SELECTED SUBTASK AS GOAL
S65
IS THERE ANY SUBTASK NOT SELECTED?
S66
YES
NO
END

FIG.15

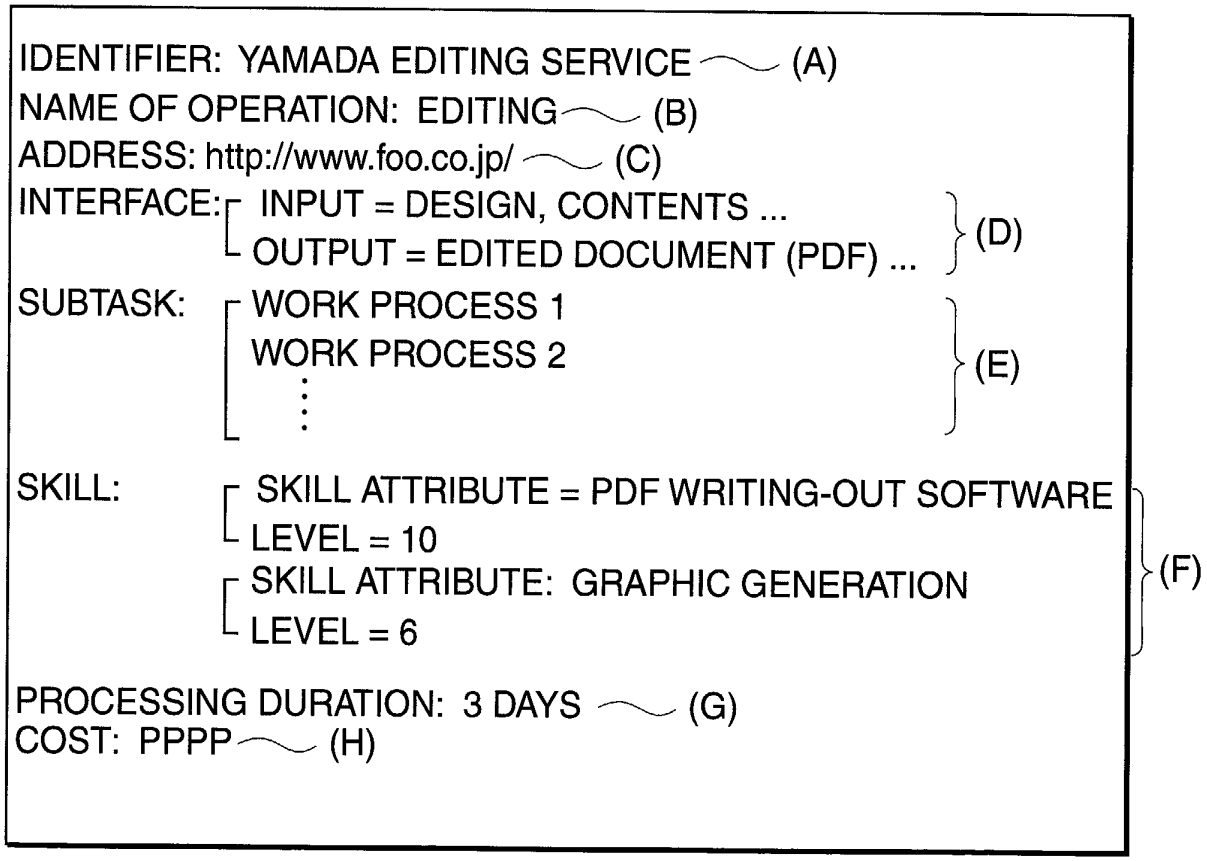

IDENTIFIER: YAMADA EDITING SERVICE (A)
NAME OF OPERATION: EDITING (B)
ADDRESS: http://www.foo.co.jp/ (C)
INTERFACE:
INPUT = DESIGN, CONTENTS ...
OUTPUT = EDITED DOCUMENT (PDF) ...
(D)
SUBTASK:
WORK PROCESS 1
WORK PROCESS 2
(E)
SKILL:
SKILL ATTRIBUTE = PDF WRITING-OUT SOFTWARE
LEVEL = 10
SKILL ATTRIBUTE: GRAPHIC GENERATION
LEVEL = 6
(F)
PROCESSING DURATION: 3 DAYS (G)
COST: PPPP (H)

FIG.16

ORGANIZATION	CUSTOMER'S NAME	EVALUATION SCORE
{A, B, C}	a a a a	4
{D, E, F}	b b b b	3
{A, B, E}	c c c c	5
⋮	⋮	⋮

FIG.17

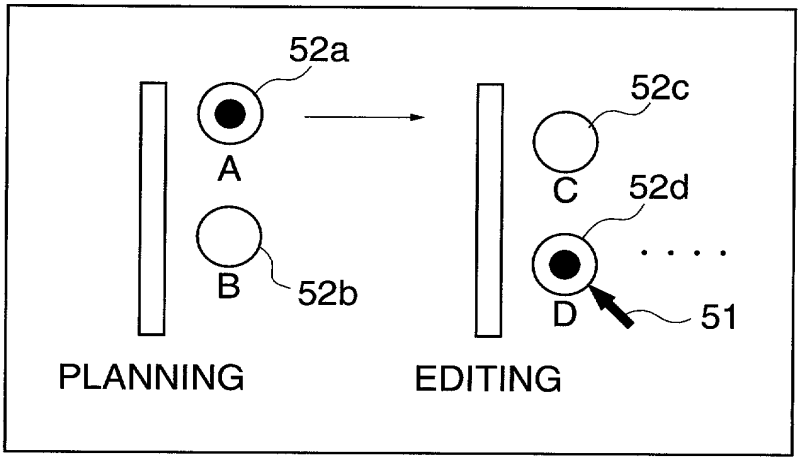


FIG.18

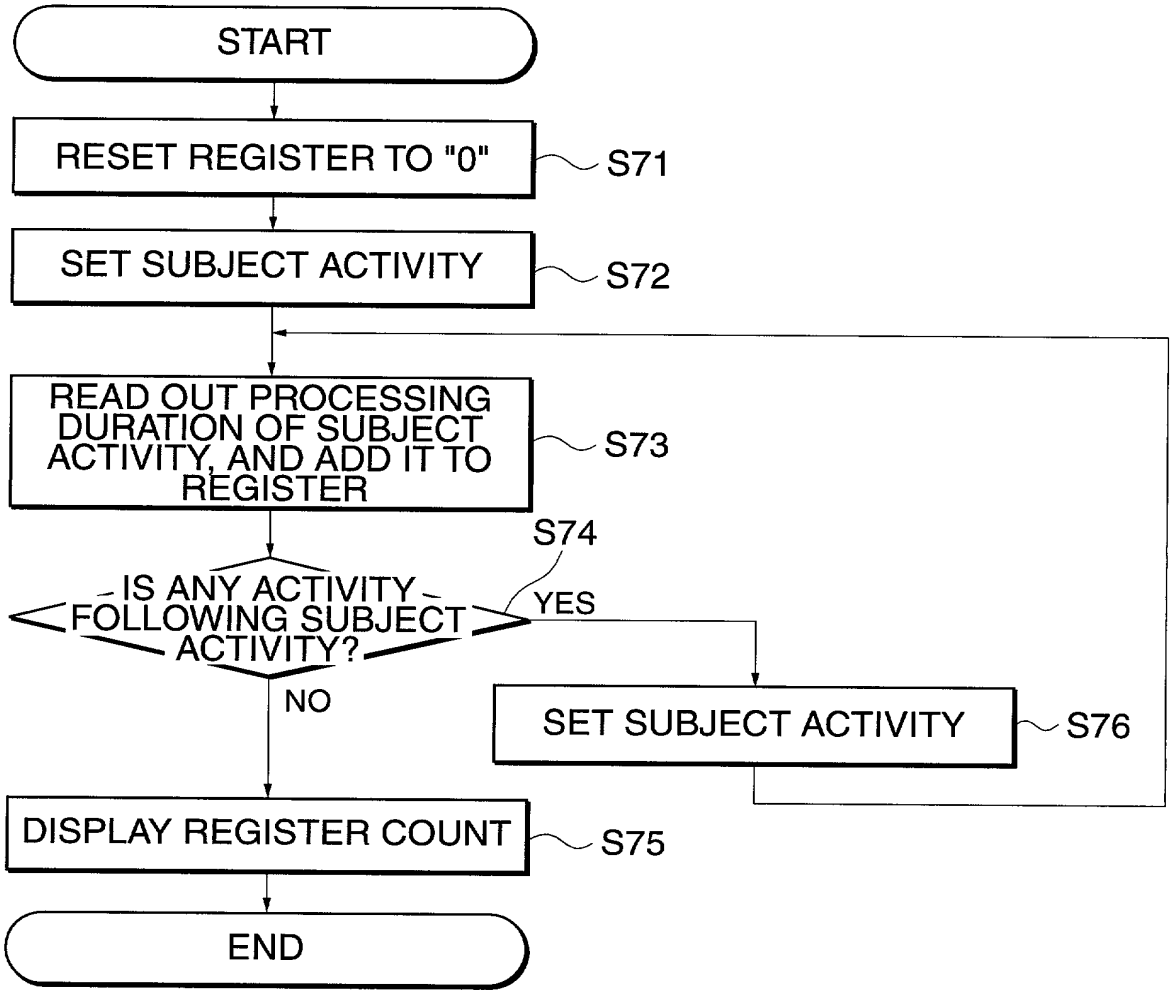
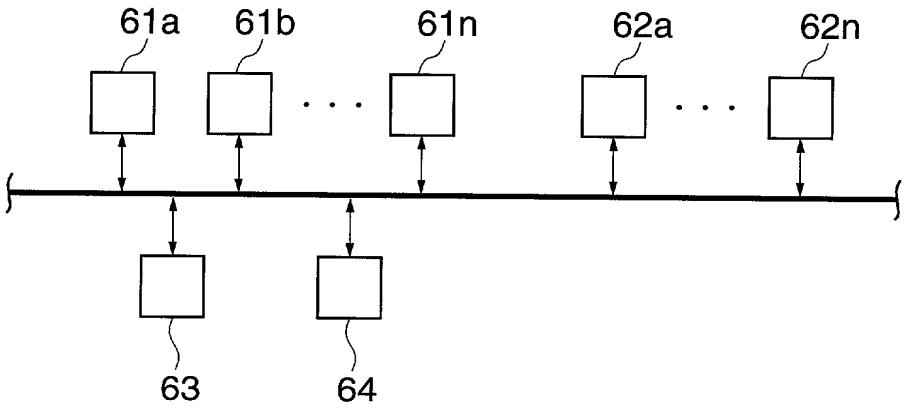

START
RESET REGISTER TO "0"
S71
SET SUBJECT ACTIVITY
S72
READ OUT PROCESSING DURATION OF SUBJECT ACTIVITY, AND ADD IT TO REGISTER
S73
S74
IS ANY ACTIVITY FOLLOWING SUBJECT ACTIVITY?
YES
NO
SET SUBJECT ACTIVITY
S76
DISPLAY REGISTER COUNT
S75
END

FIG.19



TOKTA" 05/09/60

FIG.20

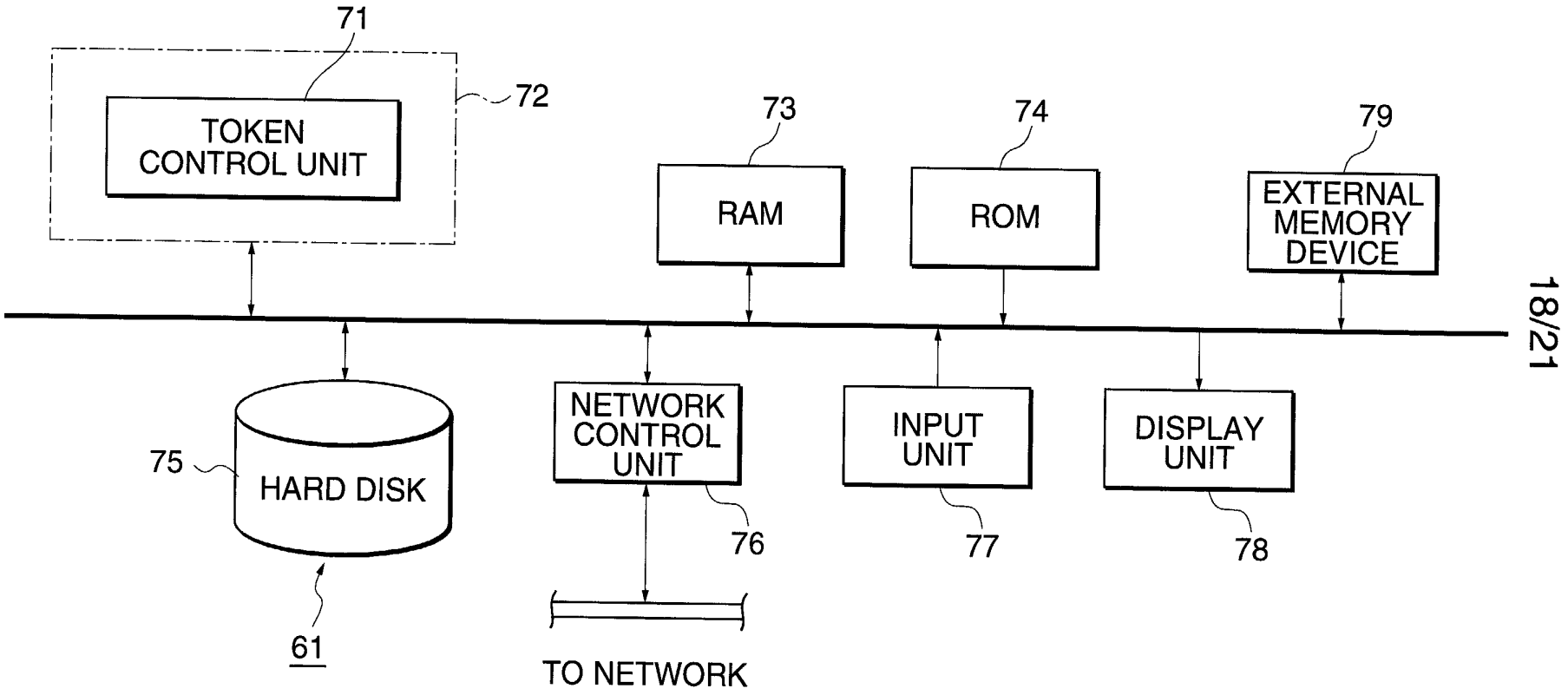


FIG.21

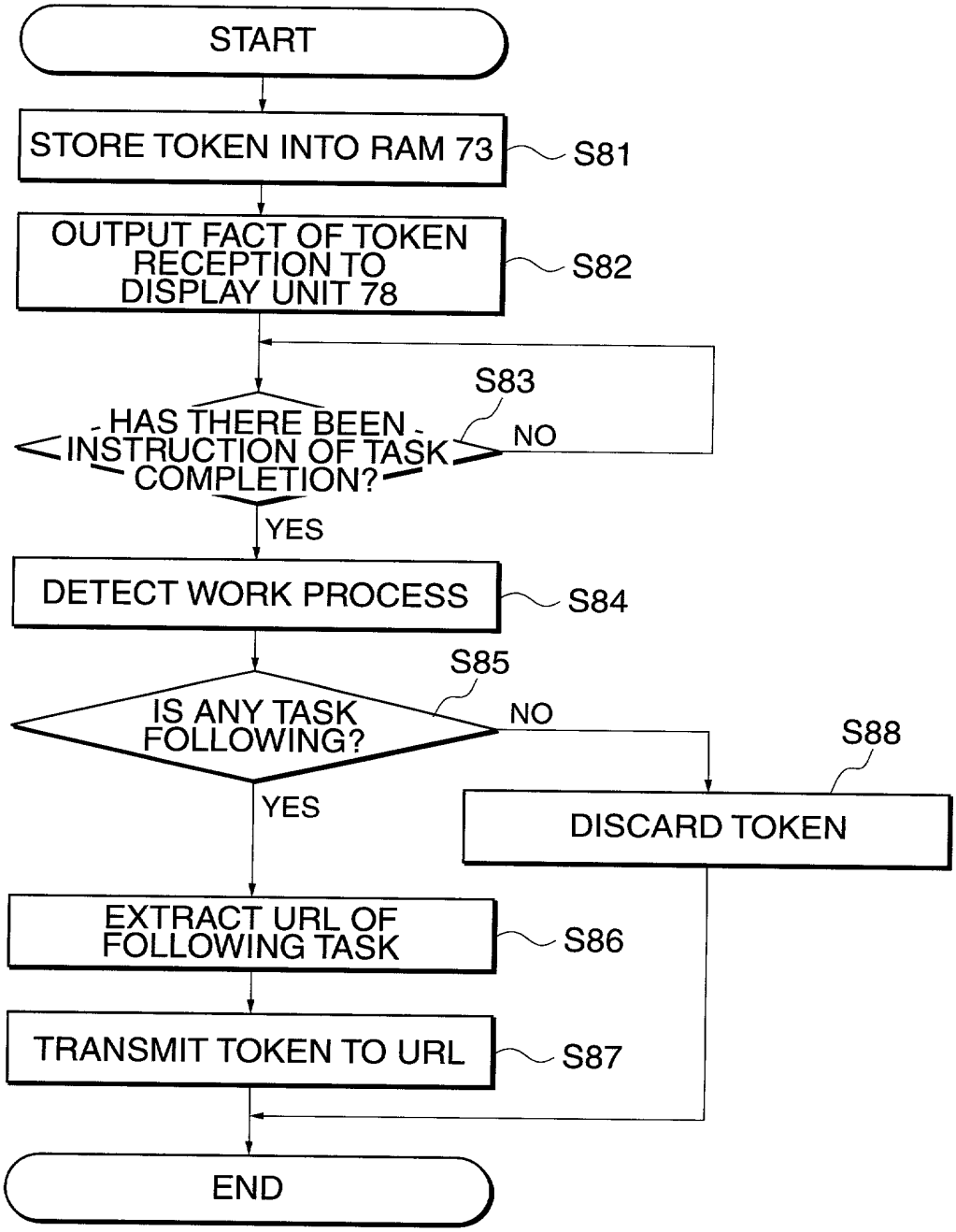

START
STORE TOKEN INTO RAM 73
S81
OUTPUT FACT OF TOKEN RECEPTION TO DISPLAY UNIT 78
S82
S83
HAS THERE BEEN INSTRUCTION OF TASK COMPLETION?
NO
YES
DETECT WORK PROCESS
S84
S85
IS ANY TASK FOLLOWING?
NO
S88
DISCARD TOKEN
YES
EXTRACT URL OF FOLLOWING TASK
S86
TRANSMIT TOKEN TO URL
S87
END

FIG.22

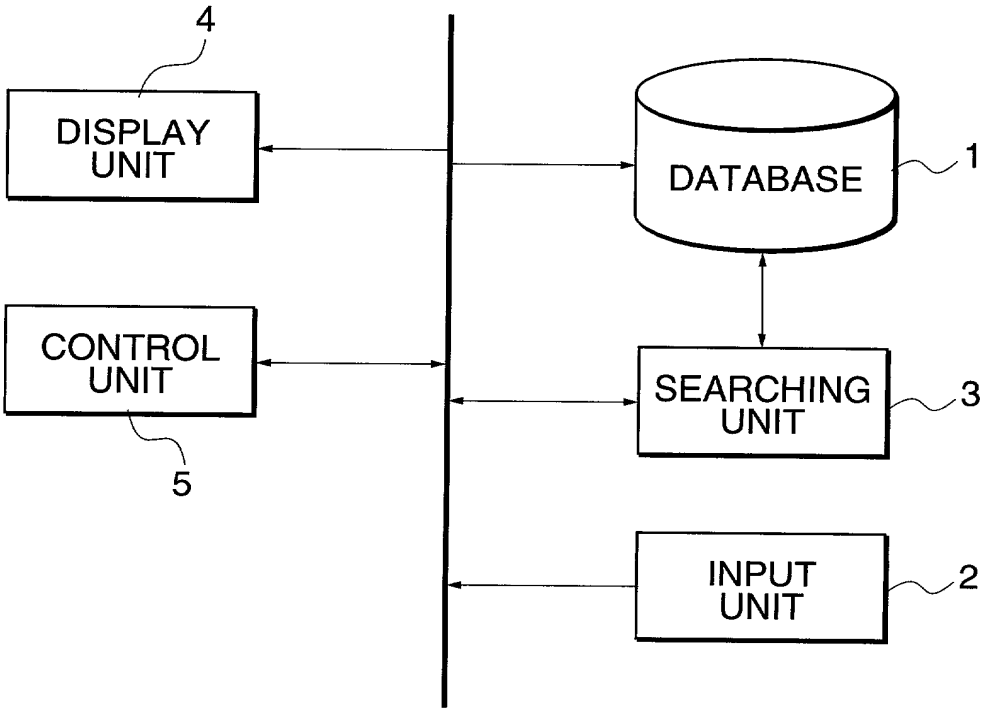

4
DISPLAY UNIT
DATABASE
1
CONTROL UNIT
SEARCHING UNIT
3
5
INPUT UNIT
2

FIG.23

```
(define  PLANNING <YAMADA>
     (succeeding  DISPLAY DESIGN <TANAKA>, CONTENTS PREPARATION <KONDO> ···)
)
(define  COVER DESIGN <TANAKA>
  (preceding  PLANNING <YAMADA>
  (succeeding  LAYOUT <SUZUKI> ···)
)
```

FIG.24

(define PROOFREADING <KATO> (preceding LAYOUT <SUZUKI>) (succeeding PRINTING <SATO>))

B A C D